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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590

06/20/2003

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EXAMINER

PERT, EVAN T

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,006

Applicant(s)

SCHOENFELD, AARON

Examiner

Evan Pert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-25,35-39 and 41-43 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-25,35-39 and 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 11-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected Species II, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 17.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-25, 35-39 and 41-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim terms “ground” and “polished” render the device claims indefinite:

How smooth is applicant’s “ground or polished” surface(s) on the die edge(s)?

Applicant argues that, based on applicant’s disclosure, one of ordinary skill in the art should understand the inherently *claimed degree of smoothness* of a die edge (perimeter) (side) surface that has been “ground or polished” [see MPEP 2113 discussing product-by-process limitations].

As pointed out by applicant, applicant’s specification does disclose that the claimed die has a side that has been “ground or polished” creating a “bi-level edge” [i.e. Species I figure in paper no. 16]. Yet, the passages cited by applicant in paper no. 15 give no direction to one of skill as to the scope of smoothness of the claimed side (edge) (perimeter) surface(s) [i.e. p. 2, lines 16-28 and p. 5, lines 18-14].

Certainly, considering the one extreme of an abrasion operation, a die edge that is atomically flat should be considered “polished”, but the fine grit in a “polishing” operation is known to create scratches, as does a grinding operation. In fact, a mechanical “polishing” operation and a “grinding” operation are comparable operations differing only in the degree of grit sizes for grinding/polishing [e.g. both are classified in Abrading - Class 431].

However, inventors in other patents have used the word “polished” to describe a side surface created by a “dicing saw” cut in monocrystalline material [U.S. 5,231,683, col. 3, lines 48-57]. Inventors have also used the word “grinding” to describe the action of a “dicing saw” which inherently must result in a “ground” surface since the surface is a result of “grinding” away material [JP3-19768 and JP 60-210891, sections entitled “constitution”].

Applicant’s specification actually does not convey any measure for assessing *the degree of claimed smoothness* couched in product-by-process claim language reading “ground or polished.”

As best as the examiner can tell, based on applicant’s written description, the degree of smoothness is not the essential point, but rather the lack of surface flaws such as chips or notches: At page 1 of the specification, applicant states that a semiconductor material surface that is “ground and polished” is “smooth and flat” and “preferably free from defects such as notches, chips or other surface flaws.” [p. 1, lines 15-17].

What is the scope of "ground or polished" for purposes of examination?

For purposes of examination, a "ground or polished" surface is interpreted as being a surface that is "preferably free from defects such as notches, chips or other surface flaws."

For purposes of examination, the degree of smoothness achieved by a cut with a "dicing saw" is indistinguishable from applicant's inherent *smoothness limitations* of "polished" and "ground" in the claims per the '683, '768, and '891 documents cited above.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 18-25, 35-39 and 41-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Kadonishi [WO 97/47029 (EP 0 844 648 A1) with priority to June 1996 (JP 145415/96)].

This rejection is currently abbreviated so as not to obscure the issues preventing patentability, but would be item-to-item-matched for purposes of appeal:

Kadonishi discloses a "semiconductor die" clearly meeting all of the limitations of all the pending claims EXCEPT Kadonishi is silent about any surface of the die being "ground or polished."

In view of evidence under the rejections under 35 USC 112 above, however, the use of a "dicing saw" inherently results in a "ground" surface that has actually been called "polished", with the actual degree of smoothness unknown or unspecified.

Yet, Kadonishi inherently has some degree of smoothness on the bi-level edges of his disclosed semiconductor die: one degree of smoothness from anisotropic etching (very smooth) and one from a dicing saw (which is a grinding that results in what has been called a "polished" surface per the rejection under 35 USC 112 above).

Therefore, the cutting with a dicing saw and formation of cutting grooves by anisotropic etching, inherently forming a bi-level edge in Kadonishi, also inherently results in surface smoothness (roughness) that can reasonably be considered as being "ground or polished."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Pert whose telephone number is 703-306-5689. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 703-308-1233.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



EVAN PERT

ETP
June 18, 2003